more refrangible than Hα, in addition to those usually seen. It was situated about ·4 of the distance from C to D. If any other observer noted the position of the arch observed at 8.15 P.M., I shall be glad to be informed, in order to calculate the height.

Clementhorpe, N. Shields, Oct. 27 HENRY R. PROCTOR

ANOTHER display of aurora borealis occurred this evening. It was not to be compared in splendour with that of the night preceding, but it had some interesting and instructive features. The sky was not clear at any time, and the masses of red light, which occupied generally similar situations to those of the preceding night, were interrupted in many places by dense clouds. I observed it at about half-past six P.M., and at that time the most remarkable feature was that streamers (generally not of a red colour) radiated from every part of the north horizon accurately to a point defined very nearly by one of the stars σ Cygni or υ Cygni, which were then near the meridian. I did not see both stars, and I am therefore in doubt, as they are of equal magnitudes, which was the star nearest to the point of convergence of the streamers.

The radiations were so well marked and so accurately directed to one point, that I mentally compared them to the ribs of an expanded umbrella. This did not last long; in a few minutes fine streamers went from the N.W. horizon towards the south-east, to the east of this point, which was then covered with red light without streamers. The largest masses of red light were, as in the preceding evening, south of the zenith, and in the south-east and south-west quarters of the heavens.

Radcliffe Observatory, Oxford, Oct. 25 ROBERT MAIN

A MAGNIFICENT auroral display was visible here on the evening of the 24th, between $8^h 0^m$ and $8^h 30^m$.

The maximum of intensity must have occurred between $8^h 0^m$ and $8^h 20^m$, but, being otherwise engaged, I did not observe anything myself until $8^h 25^m$, when the E. and W. regions of the sky, more especially the latter, were illuminated with a crimson or reddish glow, somewhat resembling the reflection of distant conflagrations, but on neither side did this glow appear to reach the zenith by many degrees. Shortly after the time mentioned ($8^h 25^m$) both disappeared, after which a phosphorescent whitish light was observed nearer to and on the S.E. of the zenith. The barometer had, during the previous day or two, shown considerable variation in atmospheric pressure.

Another display was observed on the following evening (25th), which commenced about $6^h 0^m$ and continued visible more or less until $7^h 0^m$.

The first indication that I noticed was a fiery glow similar to that seen on the previous evening, but considerably higher, and almost immediately after a magnificent broad stream of light, consisting of reddish and light tints, was observed in the N.E. extending upwards for 50° or 60°.

About $6^h 20^m$ the whole of the northern region of the sky extending to E. and W., and about 15° S. of the zenith, was more or less illuminated, and I should say the maximum of intensity occurred at this time. The principal luminous streams and coruscations appeared between N.E. and E.N.E. appearing first in the latter direction and increasing towards the former.

On one occasion I noticed faint luminous streamers rising from different northerly directions and converging in the zenith; these, together with the coloured bands of light before mentioned, formed a magnificent and imposing spectacle.

The northern sky afterwards presented an appearance of twilight until about $10^h 45^m$.

During the display the barometer stood at 29·53 (corrected for temperature). Temperature of air 49°. The minimum temperature registered during the night was 42°.

Meteorological Observatory, Twickenham JOHN J. HALL

COLLINS, in his "Superstitions of the Highlands" has these lines:—

> As Boreas threw his young Aurora forth
> In the first year of the first George's reign,
> And battles raged in welkin of the North,
> They mourned in air, fell, fell rebellion slain!

The Editor (Routledge's edition) in a note states "By 'young Aurora' Collins undoubtedly means the first appearance of the Northern Lights, which happened about the year 1715; at least it is highly probable from the peculiar circumstance that no ancient writer had taken any notice of them, nor even any modern previous to the above date." Can any of your readers state whether this is correct. C. POCKLINGTON

Poole, Oct. 27

AN aurora borealis was visible at this place on the evening of the 25th inst., between the hours of 7 and 8.30 P.M. A beautiful crimson glow was first observed towards the north-east, veiling, but not hiding, the larger stars, and the Pleiades had the appearance of a wedge of pale yellow mist behind the veil. On the horizon, looking due north, was a semicircular luminous space of clear pale light, of the colour of eastern sky just before dawn, and from this there darted at intervals over the crimson glow long slender rays of yellowish light, giving an exceedingly beautiful appearance to the phenomenon. Clouds, which had been hanging about during the day, gathered over the scene towards 9 o'clock, and when they afterwards dispersed before midnight, the glow, though still perceptible, was fading away. A falling star was observed at about eight, but considerably to the south of the aurora. There had been an aurora observed on the preceding evening, but of a less striking character. The weather has been for the last ten days extremely unsettled, sirocco (S.E.) winds prevailing, and an unusual rainfall the result, accompanied sometimes by hail, and by thunder and lightning. But clear bright days occur in the intervals of these storms, when the sky is of an intense blue, against which beautiful forms of cloud mass themselves by degrees as the day goes on, and become at length the subjects of those gorgeous atmospheric effects which make the autumnal sunsets of the bay of Fiume rivals of those of Rome.

Fiume, Oct. 28 A. M. SMITH

[In addition to the letters printed above, we have received from many other correspondents interesting and valuable descriptions of the magnificent display of the aurora, which the demands of other subjects on our space alone prevent us from publishing.—ED.]

The Aurora of Sept. 24

IT may interest your readers to know that the very brilliant aurora of the 24th and 25th September last was also visible in Canada. Mr. W. B. Dawson, writing from Montreal, notices the occurrence of a very bright aurora on both nights, flashing much, and often bright crimson. It was also seen at Quebec, and attracted much attention. He observes that its appearance was simultaneous with the division of a very large spot on the sun. Its crimson colour agrees with the red hue of your other correspondents; and is somewhat remarkable, as I have often noticed, in Canada, that the red usually alternates with green in vivid displays. GEORGE M. DAWSON

Royal School of Mines

Hereditary Deformities

THE alleged instances of hereditary deformity produced by your correspondent in NATURE for Oct. 20 do not seem at all satisfactory. They may all be referred either to an hereditary disease of the part affected, as in the suppuration of the cow's horn; or to coincidence, accompanied by a slight stretch of imagination on the part of the first narrator, as in the cases of the scar on the forehead and the crooked finger.

Prof. Huxley, in his lectures on Natural History at the Royal School of Mines in 1864, after speaking of the short-legged breed of Ancon sheep, and the six-fingered Maltese, Gratio Kelleia, said that although natural malformations were thus transmitted, artificial malformations never were; and instanced the fact of the mutilation produced by circumcision never being transmitted to the offspring. This, of course, is a negative argument, but it has great weight when we consider how many thousands have undergone that mutilation without an instance of its having been inherited by their children.

Faversham, Kent, Oct. 25 WILLIAM FIELD

The Cefn Reptile and the "Times"

THE remarkable paragraph in the *Times* of the week before last relating to the discovery of "a huge beast of the lizard tribe," in a cave at Cefn near St. Asaph, implies a belief on the part of the editorial staff that such an addition to the British fauna was not impossible, and its wide circulation proves the astonishing credulity of the public:—

"In the Vale of Clwyd, at a distance of two miles from the

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cathedral city of St. Asaph, are situated the Cefn Caves. It had been rumoured of late that parties visiting this place had on several occasions seen some strange animal creeping in its dark recesses, and on Saturday visitors reported having had a good view of him, and stated it was a huge beast of the lizard tribe. On the Monday following Thomas Hughes, from Rhyl, went to try to capture him. Armed with a stout stick he approached its reported lair, but not seeing it he decided to remain in ambush at the mouth of the cave, sheltered by a projecting ledge. After having thus waited an hour his patience was rewarded with success. He could hear in the far end a hum as of a hive of bees. The sound growing louder, and now apparently quite close, Hughes peeped round the ledge, and saw the monster within three yards of him. He (Hughes) sprang towards him, and dexterously wielding his stick he dealt him a well-aimed blow upon the neck just behind the head, which caused him to stagger and reel. One more blow in the abdomen finished him. Hughes carried him home in triumph, and is now making a profit out of the affair by exhibiting him at Rhyl. The monster is of the lizard tribe, as mentioned above. Only that our country is destitute of those creatures we should have said it was a young crocodile. It measures from the nose to the end of its tail exactly 4ft. 7in., the tail being rather more than half that length. Its limbs measure 12in.; the front ones have five toes; and the hind ones four; it is webfooted. Above it is black and white beneath. Its coat is mailed, quite hard, and protruding in sharp corners and angles, like the crocodile's. The head is low and flat, the mouth large and round at the end, measuring 7in. by 3in.; the teeth are numerous, but small, and bear great resemblance to those of a large codfish. There is ample scope here for naturalists to investigate the how and wherefore this strange amphibian came to be discovered in the present epoch among the hills of North Wales."

Such is the vivid account of the capture given in the *Times*, and reprinted in several local papers; and so far as I can judge by my letters, believed in by many simple-minded people. It is altogether a most impudent hoax. The man Hughes is a sweep, who purchased a reptile which happened to die in a travelling menagerie at St. Asaph, and exhibited it at Rhyl as having been caught in the Cefn Caves, until at last it became a public nuisance, and was committed to the earth. The story related in the *Times* was invented merely to make the exhibition lucrative to Hughes the sweep. Its wide circulation, which incidentally shows an astonishing ignorance of natural history, is the only excuse for my writing this letter.

W. BOYD DAWKINS

MAN AND NATURAL SELECTION

THE following reply to M. Claparède's "Remarques à propos de l'ouvrage de M. Alfred Russel Wallace sur la Théorie de la Sélection Naturelle," was written some months ago, and was intended as an appendix to a French translation of my "Essays" by M. Lucien De Candolle, to be published by Reinwald, of Paris. As it is now very uncertain when the translation will appear, and as M. Claparède's critique has been highly spoken of in several English periodicals, I think it advisable that my answer to it should be no longer delayed.

In the "Archives des Sciences de la Bibliothèque Universelle," for June, 1870, M. Edouard Claparède has done me the honour to make my "Contributions to the Theory of Natural Selection" the subject of some critical remarks. To these I now propose briefly to reply.

I must premise that I do not intend to discuss here any of those difficulties which my critic finds in the theory of sexual selection, and which apply as much to Mr. Darwin's views as to my own, because, in his new work now announced, that theory will, I have no doubt, be fully developed, and be supported by a mass of facts and observations, in the absence of which further argument is useless. I proceed therefore to the objections that apply more especially to my own views.

At p. 15 of his "Remarques" M. Claparède says, "Son étude est consacrée á la coloration des oiseaux et, absorbé dans son sujet, l'auteur oublie que d'autres facteurs peuvent, aussi bien que la couleur, attirer l'attention des ennemis sur la gent ailée. Un nid couvert d'un dôme volumineux échappera tout aussi peu, grâce à ses dimensions, à l'œil d'un animal en quête de proie, que quelques plumes brillament colorées. Les gamins de nos villages en savent quelque chose, comme l'a remarqué M. le Duc d'Argyll, et ils ne réussissent que trop, à la présence d'un gros nid, à deviner l'oiseau caché et sa couvée." This objection does not seem to me very serious, because in the first place, nests, however large, generally harmonise in colour with surrounding objects, and are not so easily seen at a little distance as a bright patch of colour; and, secondly, because "gamins" are not the chief natural enemies of the feathered tribes, while hawks and falcons do not break open nests, although they do seize and devour birds.

After giving (p. 23—25) what I must allow to be a very fair abstract of my reasons for believing that Natural Selection is not the only power that has operated in the development of man, M. Claparède intimates that I have so completely abandoned my own Darwinist principles that the reader will easily refute my arguments. He therefore confines himself to certain "reflections." I regret that he did not think it necessary to do more than this, because I have as yet in vain sought from my reviewers for any other than general objections to my arguments on this subject, and am at a loss to know how they can be so easily refuted. M. Claparède's "Reflections," however, do, fortunately, take the form of arguments. He says (p. 25), "M. Wallace n'a pas reculé devant l'explication de la formation graduelle du chant de la fauvette et du rossignol par voie de selection naturelle. La chose est toute simple, bien fou serait celui qui voudrait recourir ici à l'intervention d'une Force supérieure, ami du Beau! Les fauvettes femelles et les rossignols de même sexe ont toujours accordé de préférence leur faveurs aux mâles bons chanteurs. C'était la conséquence de leur goûts musicaux et des aptitudes harmoniques de leur oreille. Malheur aux pauvres mâles à registre peu étendu ou à timbre fêlé! les douceurs de la paternité leur ont été impitoyablement refusées; ils sont morts de jalousie dans la tristesse et l'isolement. Ainsi s'ést formée la race des bons chanteurs qui peuplent nos bocages. Pourquoi n'y a-t-il pas des chanteuses? Sans doute que les oiseaux mâles ne se sont jamais souciés de la voix de leurs épouses, soit parcequ'ils n'avaient pas l'oreille juste, soit plûtot, car cela sera contradictoire, parceque leurs gouts musicaux étaient suffisament satisfaits par leurs concerts personels. Peut-être aussi les femelles n'avaient-elles point d'aptitude virtuelle au perfectionnement de la voix; peut-être avaient-elles atteint l'extrême limite de développement vocal compatible avec l'organisation d'un oiseau du sexe féminin; ou bien enfin la sélection naturelle produite sous l'influence des poursuites exercées par des ennemis de toutes sortes contre les belles couveuses, sélection favorable, selon M. Wallace, à la production de couleurs sombres, a-t-elle mystérieusement éteint même l'éclat de sa voix? Quoiqu'il en soit, il est évident pour M. Wallace que la sélection sexuelle, en d'autres termes le goût des dames fauvettes pour la musique, a amené le grand perfectionnement de la voix des virtuoses de l'autre sexe. Mais dans l'espèce humaine, la chose aurait-elle pu se passer ainsi? Le chant harmonieux et enchanteur d'une *prima donna* aurait-il pu naître et se perfectionner par voie de sélection? Le goût musicale des auditeurs pourrait-il avoir eu une influence selectrice sur ce phénomène? Jamais, au grand jamais! Seule l'intervention d'une Force supérieure a pu amener un résultat pareil, car jamais homme primitif n'a eu de goût pour la musique. M. Wallace le sait bien: il a vécu si longtemps parmi les sauvages qui ont pu le lui dire! Au contraire, les femelles fauvettes primitives et les femelles rossignols primitives, avaient déjà le goût musical longtemps avant que leurs époux eussent appris à chanter.

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